

**Notice of Allowability**

Application No.

10/642,400

Examiner

Tan Ho

Applicant(s)

LYON, QUINTON

Art Unit

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☐ The drawings filed on \_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).  
\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☒ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date ____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material         | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other ____.   |

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

- In specification , page 8, line 2, change "The microwav -based level" to -- The microwave -based level--.
- In claim 1, line 2, change "said level measurement system" to -- said level measurement device--.
- In claim 4, line 1, change "The level measurement d vice" to --The level measurement device--.
- In claim 8, line 1, change "The level measurement syst m" to --The level measurement system--.
- In claim 9, line 1, change "The level measurement device" to --The level measurement system--.
- In claim 13, line 2, change "said level measurement system" to --said level measurement device--.
- In claim 15, line 1, change "The level measurement device" to --The level measurement instrument--.
- In claim 16, line 1, change "The level measurement device" to --The level measurement instrument--.

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- In claim 17, line 1, change "The lev l measurement device" to --The level measurement device--.
- In claim 19, line 2, change "said level measurement system" to --said level measurement device--.

These changes were made to provide a proper antecedent basis in the claims.

***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance:

Claims 1 and 13 recite a level measurement device for making level measurement of a material in a vessel comprising a housing, a transducer for emitting energy pulses and receiving energy pulses reflected by the material contained in the vessel, a circuit having a transmit component and a receive component, wherein the circuit includes a port for coupling to a controller, the port including an input for receiving transmit control signal and an output for outputting the receive signal to the controller, the transducer comprising a planar antenna formed on the surface of a printed circuit board, the antenna having an input port coupled to the transmit component, and an output port coupled to the receive component in the circuit.

Claim 7 recites a level system for measurement the levels of materials contained in one or more vessels comprising a plurality of microwave based device, a plurality of ultrasonic based devices, a controller having a plurality of ports for coupling each of the microwave based devices and the ultrasonic based devices, the controller providing control signals to each of the microwave based devices and the ultrasonic based devices to transmit energy pulses and reflecting energy pulses from each of microwave

based devices and the ultrasonic based devices to generate a receive echo profile for each of microwave based devices and the ultrasonic based devices and determine a level measurement reading, wherein the microwave base devices are interchangeable with the ultrasonic based device for the controller.

Claim 14 recites a level measurement instrument for making level measurement of a material in a vessel comprising a housing, a transducer for emitting energy pulses and receiving energy pulses reflected by the material contained in the vessel, a transmitter coupled to the transducer and the transducer being responsive to a transmit signal for emitting an energy pulse, a receiver coupled to the transducer and generating a receive signal in response to a reflected energy pulse received by the transducer, a port for coupling to a controller, wherein the port includes an input for receiving transmit control signals and an output for outputting the receive signal to the controller, and the transducer comprising a planar antenna formed on the surface of a printed circuit board, the antenna having an input port coupled to the transmitter, and an output port coupled to the receiver.

Claim 19 recites a level measurement device for making level measurement of a material in a vessel comprising a housing, a transducer for emitting energy pulses and receiving energy pulses reflected by the material contained in the vessel, a transceiver circuit having a transmit port coupled to the transducer and the transducer being responsive to a transmit signal for emitting an energy pulse, a receive port receiving a receive signal in response to a reflected energy pulse received by the transducer, the transceiver circuit including a port for coupling to a controller, wherein the port includes

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an input for receiving transmit control signals and an output for outputting the receive signal to the controller, and the transducer comprising a planar antenna formed on the surface of a printed circuit board, the antenna having an input port coupled to the transmit port, and an output port coupled to the receive port in the transceiver circuit.

None of the prior arts shows or suggests these level measurement devices.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Ho whose telephone number is (571) 272-1822. The examiner can normally be reached on M-F (8:00AM - 5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TAN HO  
PRIMARY EXAMINER